

December 21, 1955

SAPC 3114  
COPY 1 OF 2

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I feel that you might like to have a progress report as of my last trip west, so I will try to set down my observations and feelings as to where we now stand on the photographic end of our program.

As a result of the meeting at the hotel, I have a much clearer understanding of the present planning for the intensity of the use of the equipment. I know that C.J. has had some sport at our expense over the life expectancy of his metal work as compared to ours but I believe that a much better comparison is with RK of PW and his mixer. In conversation with the latter, I learned that the overhauls and maintenance problems of the currently discussed numbers as regard to his devices had long since been gone into and some steps taken to provide for the change. I can't help but wish we had tackled the same problem from the same point of view some months ago for it now requires a rather extensive re-look at the whole show to see what really will be needed. Don't misunderstand me, for our point of view will be to recommend a minimum of equipment to answer the need in a satisfactory way but this minimum will have to be larger than at present. All this will take some time so it will make us, on the camera end, look as though we had missed the boat until we can get underway on the new job and get caught up.

The evening session was most instructive for here again we met a new point of view. The plans are laid on a scale and in a fashion so different from the "out of a traveling bag, commercial sort of operation" we had been expecting as to require some re-orientation of our activities. These are more of the sort that I should have foreseen but did not. Matters of stock lists and equipment descriptions were expected to be much less formal and more flexible if in the hands of the individual crew chiefs than now can be the case if handled through channels of supply of a more standardized and sophisticated nature. Upon return to Pasadena, and later to Norwalk, the various aspects of this problem have been probed and it now looks as though we will be able to supply not only the information but the sets of parts required by the 15th of January.

The first mission of long duration resulted, as you are aware, in some interesting film. First, the troubles: I motored out to be on hand at the landing and got a quick look at the windows (this was A-2). They were covered on the inside by drops of liquid which look like skimmed milk. Several hours later when the bottom was removed, the liquid had changed to a thin uniform film of oil not only on the windows but on most any metal surface inside the bay. I interpret this to indicate that at altitude the bay had contained oil vapor in some quantity which on decent had combined with water condensate and formed on the windows. After landing, the water had evaporated and left the oil on the windows (and elsewhere). The problem is, of course; what was the condition of the windows just prior to decent? Looking at the films of this particular flight, the frames get worse and worse toward the end of each load. However, this could equally well be due to increased cloudiness. The charter dome did not cloud on the inside, so this film should give a good indication of the cloudiness of the weather. This roll had not been developed by the time I left, so I don't have the additional information. Thus the oil vapor problem faced already in the cockpit is also a problem in our bay.

The large pictures were most interesting and I regret I did not have more time to study them. Due to a misunderstanding at the base, the standard XX film used on this flight was given the treatment suggested for the new 1121 material with the result that it turned out dense and grainy. Even so, parked cars indicated 20 line resolution

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Page 2

December 21, 1955

reassuring us on the correctness of IMC and focus. All cameras operated satisfactorily with the following exceptions:

- 1) Shutter trouble on No. 2. (The one with tilted platen.) This is the loss of spring tension problem which has plagued us and everyone else who uses these particular shutters. A lot of engineering attention is being given to this one at Hycon these days.
- 2) The lights on the clocks did not function. Just what happened here is not yet clear to me but I suspect an inadequate preflight check and a switch not thrown to the proper position.
- 3) Improper advance of the film. This was caused by some fumbling in the loading and each new team is allowed\*to make such an error once in training and they never forget it or do it again. A few more of these real flight tests will be required to shake down all the possible troubles of this sort.

In some regards, particularly our ability to recognize familiar objects, the pictures were disappointing to me. The natural inclination to use more power in the magnifier to make up for the smaller scale due to the increase in altitude over anything I have seen before, may be the true source of my lack of jubulation. Numerical measurements to the extent they have been possible are reassuring and the better lenses now on the way may very well give that truly striking result we, or at least I am aiming and working for.

On the whole, I found the very difficult technical problems of "B" in quite satisfactory shape. The main parts are being put together and the general over all structure is taking form. The moving lens and large mirror are assembled and look quite workable. Spools, film advance, platen and shutter have all worked as individuals and are now being assembled together.

I have just talked to JGB and a letter containing the design for "C" is in the mail. I saw and worked with a full weight and motion mock-up of the stabilizing device. This gadget is going to work and I have yards of recorder tape (angular rate) to prove it. Even Bill McF., a man from Missouri, if I have ever known one, now feels that 180 inches may be usable. I don't think he has had a good night's sleep from the day we decided to go back to 180 until he saw the angular rate data. I'll send a new schedule on "C" when I have had a chance to digest the new design.

*Good,*

RMS/dmg